

Notice of Allowability

Application No.

10/512,054

Examiner

John H. Le

Applicant(s)

TARKIAINEN, ANTTI

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/11/2007.
2. ☒ The allowed claim(s) is/are 13-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Response to Amendment

1. Applicant's amendment filed 07/11/2007 has been entered and carefully considered.

Claims 13 and 19 have been amended.

Claims 20 and 21 have been added.

Claims 1-12 have been canceled.

Examiner's Amendment

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The applicant has been amended as follows:

In the abstract:

The invention relates to a method for determining properties of a negative sequence component of a space vector quantity in an electrical network. The method according to the invention ~~comprises~~ includes the steps of determining on the basis of the properties of an ellipse formed by a space vector of the space vector quantity in the electrical network the magnitude of the negative sequence component of the space vector quantity in the electrical network and the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component.

~~(Figure 1)~~

Reasons for Allowance

3. Claims 13-21 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The combination as claimed determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector; controlling the electrical network by supplying in the electrical network a voltage whose voltage unbalance has been compensated based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component (claim 13, claim 19, claim 21) is not disclosed, suggested, or made obvious by the prior art of record.

The combination as claimed determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector; controlling the electrical network based on storing data and based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to

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a positive sequence component (claim 20) is not disclosed, suggested, or made obvious by the prior art of record.

Huggett et al. (USP 6,201,715) disclose a method for determining properties of a negative sequence component of a space vector quantity (voltage) in an electrical network (e.g. Figs. 1-2, Col. 2, lines 9-30), wherein the method comprises the steps of determining on the basis of the properties of an ellipse formed by a space vector of the space vector quantity (voltage) in the electrical network the magnitude of the negative sequence component of the space vector quantity in the electrical network (e.g. Col. 2, lines 20-30, Col. 3, lines 14-25, lines 44-50) Col. 4, lines 27-33) and the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component (e.g. Col. 2, lines 20-30); wherein determining the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component comprises determining the angle of the minor semi-axis of the ellipse formed by the space vector of the space vector quantity (voltage) in the electrical network (e.g. Col. 3, line 41-Col. 4, line 26).

However, Huggett et al. do not disclose determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector; controlling the electrical network by supplying in the electrical network a voltage whose voltage unbalance has been compensated based on said determined magnitude of the negative sequence component of the space vector quantity and said determined

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location of the negative sequence component of the space vector quantity in relation to a positive sequence component. Huggett et al. also do not disclose determining the length of the space vector of the space vector quantity and its derivative; determining the zeros of said derivative; determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector; controlling the electrical network based on storing data and based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H. Le whose telephone number is 571 272 2275. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571 272 2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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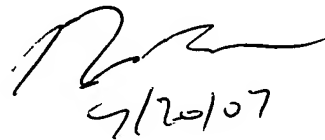
published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

July 18, 2007

BRYAN BUI
PRIMARY EXAMINER



7/20/07